Critical Analysis: Stage 1

The first reference point I wanted to take note of, was fallout's menu, which uses a simple darkening and lightening effect for the indication, and although it was simple, its effectiveness caught my eye this is why I decided to use it. Simplicity remains a theme for my other two menu references, the color zen and microsoft solitaire and casual games, both very casual games with simple yet effective animations that serve their purpose of simply letting the user know what is taking place in front of them. What works for these animations is a very good sense of indication. This kind of falls short for the other animation, fallout as it is a bit sharp and does not have any form of smooth transitioning between the menu's actions or the button clicking. This works within the context of the game, but not necessarily for my purposes.

The animation principles I can identify for solitaire and the color zen, are the use of ease in and ease out to help incorporate the smoothness of the buttons enlarging or shrinking.

The next reference is the character. I was very interested with the context of procedural animation and using this to reduce the amount of keyframes necessary for the gameplay, which is why I would like to challenge myself to attempt this, maybe not to the highest possible level, but as close as I can get. It really served to create effective, albeit not as smooth as I would have liked. It uses the simple pose to pose with interpolation from the engine to get this effect which is what I believe would be quite interesting to explore.

The enemy animation uses normal animation techniques as far as I can tell, but it does make use of a crawling technique as this fits what the enemy's designed movement. It also uses pose to pose animation, simple anticipation and some squash and stretch as far as I can tell.

Another animated element is the door, this also uses very simple animation techniques such as ease in and out to register its movements, this makes it a very simple but effective motion for the sake of the animation.

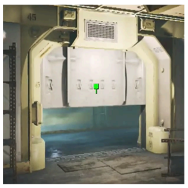
In the animation, the static elements—a table and a monitor—act as the stable backdrop, grounding the scene in realism. The table provides a surface for placing items, while the monitor adds a sense of modernity and functionality.

The dynamic element is the draggable dead body, which uses simple transformations and keyframing. It moves in response to user interaction, with its speed depending on how it's dragged. This dynamic component adds an interactive layer to the scene.

The character, with about 62 bones, exhibits intricate movements and fluidity. The detailed rigging allows for natural limb positioning and posture adjustments, enhancing the realism of their actions. The character's feet adjust to uneven terrain, and their interactions with objects are convincing, adding depth to the animation.

In summary, the interplay of static elements (table and monitor) with the dynamic draggable dead body and the intricately animated character creates a rich and engaging scene. The static components provide stability, while the dynamic elements introduce motion and interaction, resulting in a compelling and immersive animation.

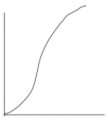
Begins opening
00:00:00

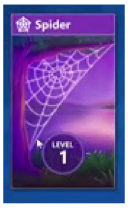


Opening
00:00:08

Ends opening
00:00:16

Normal
00:00:00





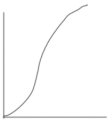
Smaller
00:00:04
I descreased the image size to emphasize the effect

Back to normal
00:00:08

Ease in-out

Ease in-out

Normal
00:00:00



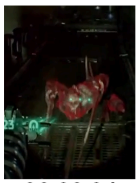
Bigger
00:00:04
Increased the image size to emphasize the effect

Back to normal
00:00:08

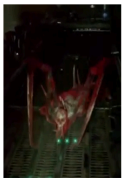
Ease in-out

Ease in-out

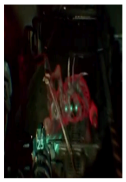
00:00:00
Contact
Neutral



00:00:04
Recoil
Down



00:00:08
Passing
Rising



00:00:12
Low point
Down

00:00:16
Contact
Neutral

Middle Contact
Neutral
00:00:16

Contact
00:00:00
Neutral

Recoil
00:00:04
Down

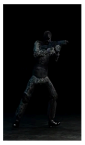
Passing
00:00:08
Rising

High point
00:00:012
Up

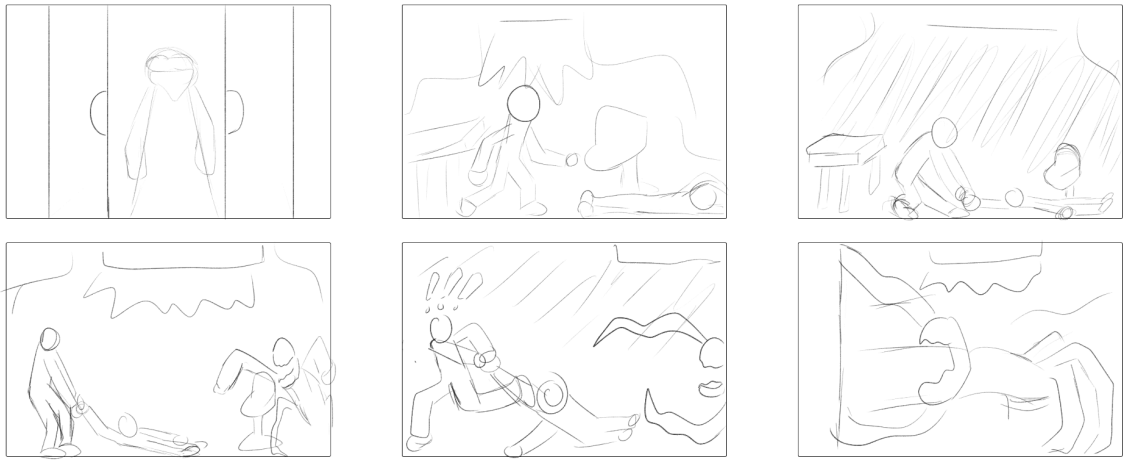
Recoil
00:00:20
Down

Passing
00:01:24
Rising

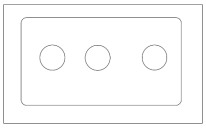
High point
00:01:28
Up



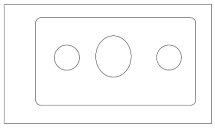
Contact
00:00:32
Neutral



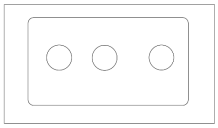
Frame 1: The first frame features the door opening and the player entering
Frame 2: The player walks towards the dynamic object, the body
Frame 3: The player then begins dragging the dead body, and the light begis flickering
Frame 4: The monster enters the scene and the light flickers back on to reveal the monster
Frame 5: The player then begins to run for the door. And the monster begins to chase
Frame 6: The player then escapes into the door and the monster hits the door



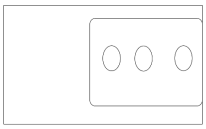
Menu opens up



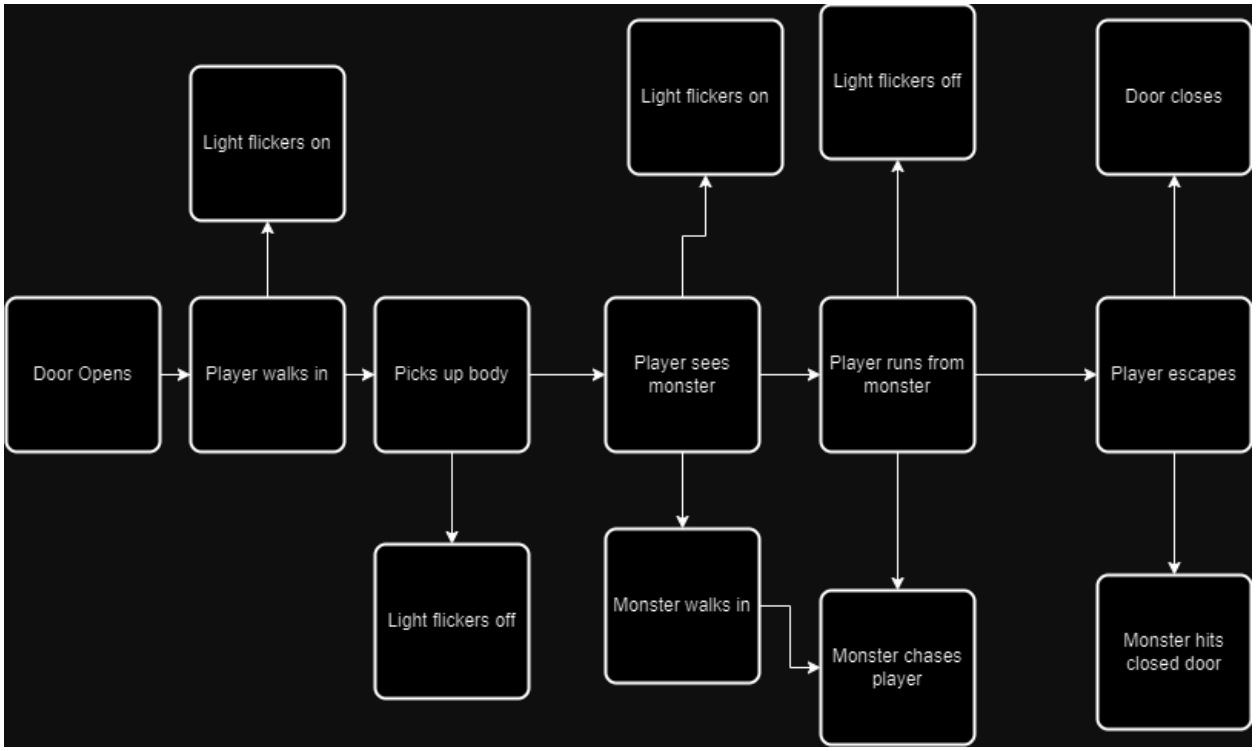
Button gets clicked



Button returns back to normal



Menu flies out



My timing charts are very simplistic as the animations themselves are, and essentially reference the key movements and techniques used in the movements, for example the player and enemy movements make reference to a classic walk cycle, with contact, recoil passing and high point movements, which also affect the motion of the player up and down, making it more effective

and more believable. The animation technique primarily utilized throughout these animations is LERP to help transition from one keyframe to the other effectively, to create the sense that the animations are truly smooth from one place to the other this is more so effective in the procedural player, which uses this to enhance his movements as only one keyframe/base pose is used the make all the animation, this takes the concept of LERP to its extreme, as it shows how truly powerful math is in the context of animation.I can infer from the math that knowing the base pose is essentially a contact animation, it is interpolating the mirror of this pose every 8 or so animations, and then making slight adjustments in-between these frames to make a believable and effective version of the recoil passing and highpoint animations

The transitions between animations (like a simple walk cycle, opening a door, clicking a button that shrinks and returns to normal, and an enemy walk cycle) vary in smoothness and speed. The simple walk cycle should appear fluid and consistent, emphasizing natural leg and arm movements. When the door opens, the transition's smoothness is crucial It shows the slow and well timed opening and entering of the character through the door. This ensures naturalness. For the button-click animation, the brief shrink and return should be rapid but smooth, emphasizing a responsive interaction. The enemy walk cycle would need to maintain consistency in movement, similar to the player's walk cycle.

The game can handle interruptions through blending animations smoothly rather than abruptly. For instance, if the character is running and then performs a secondary action like opening a door, the game can blend these animations, ensuring the character doesn't suddenly switch poses but transitions fluidly.

Smooth transitions improve immersion, making actions appear fluid and realistic. They prevent the player from noticing sudden, jarring changes that break the believability. However, achieving this smoothness can be complex and resource-intensive, requiring more detailed animation work and potentially increased processing power.

References

https://www.cs.cornell.edu/courses/cs5152/2024sp/labs/design1/ walk cycle

https://www.mixamo.com/#/ character rig

https://substance3d.adobe.com/community-assets realistic materials used